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TWO CASES OF PROSTATECTOMY.

BY

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PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF PENNSYLVANIA;
SURGEON TO THE UNIVERSITY AND GERMAN HOSPITALS.



FROM
THE MEDICAL NEWS,
December 13, 1890.

[Reprinted from *THE MEDICAL NEWS*, December 13, 1890.]

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DR. BELFIELD'S original operation, followed by Mr. McGill's admirable work in the removal of portions of the prostate in those cases in which catheterization has become impossible, or has ceased to give relief, and in which cystitis has developed and septicæmia or uræmia is imminent, have attracted the attention of surgeons everywhere, and vastly increased the number of cases submitted to similar operative procedures. It is, therefore, of special importance at this time that all such cases, with their results, favorable or unfavorable, should be published, in order that we may arrive, as soon as possible, at some definite conclusion as to the indications and contra-indications, as well as to the scope and limitations of this operation, so exceedingly important on account of the large number of men who are the subjects of prostatic hypertrophy, and because in aggravated cases the suffering is so great and the disability so complete. For these reasons I desire briefly to place upon record the following cases :

CASE I.—I. S., aged sixty-eight years, white, a hotel-keeper ; family history of tuberculosis ; always



a moderate drinker, recently intemperate, Urinary symptoms began sixteen years ago; catheter has been required at intervals for eight years; for four years he has been unable to urinate at all without catheterism. Pain in hypogastrium has been progressively increasing until now it is constant and excruciating; pain is also felt at the end of the penis and in the rectum. He has lost flesh rapidly, having gone down from about 170 pounds to 120 pounds. Is sallow and pinched in appearance; has chronic bronchial cough; eats and sleeps poorly. Urine scanty (20 ounces in twenty-four hours) and loaded with pus and vesical débris; contains hyaline and granular casts. Physical examination *per rectum* reveals a prostate enormously enlarged both laterally and longitudinally, the finger being unable to reach its upper limit. The bladder contains a soft phosphatic stone of medium size. Mitral murmur of heart; bronchial catarrh, with evidence of beginning consolidation at left apex.

The case seemed very unfavorable, but the patient's suffering was so great, and his condition so steadily deteriorating, that it appeared to be justifiable to run considerable risk in attempting to relieve him. An operation for the removal of the calculus at least was clearly required. Litholapaxy was slightly contraindicated by the intense cystitis which existed, and by the probability of recurrence, as the calculus was phosphatic, and strongly by the fact that the retention would remain unrelieved. Perineal lithotomy was negatived on account of the size of the prostate, and because of the very insufficient digital exploration of the bladder which it would permit.

Suprapubic lithotomy was therefore decided upon. The question of further operative interference, in case it was found practicable, with the object of removing the obstruction, was then submitted to the

patient, with a fair statement of the attendant risks, which he promptly decided to accept.

The patient was carefully prepared by rest in bed, milk diet, attempted sterilization of urine by boric acid administered both by the mouth and by vesical irrigation, full doses of quinine, etc. At the time of operation the bladder was rendered accessible and opened in the usual manner. An oval rectal bag was used, and filled with eight to ten ounces of water. Ten to twelve ounces of warm boric-acid solution were injected into the bladder, which was reached by a linear incision three and a half inches long just above the pubes. The walls were transfixed with silk threads held by an assistant. The stone, which lay in the *bas fond*, crumbled down under the touch of the forceps, and had to be removed by the finger and a scoop. It was then found that both the middle and lateral lobes were greatly enlarged and projected far into the bladder. The mucous membrane at places was snipped through with scissors, and the major portions of the projection removed by enucleation with the finger. This required the exercise of only moderate force, and was not attended by any considerable hæmorrhage. The pieces removed, eight in number, varied in size from a hickory-nut to a large walnut, and weighed three ounces. A large drainage-tube was inserted into the bladder and held in place by a stitch through one wall of the wound. A suture was inserted at each angle. The patient was returned to bed, with the wound dressed, fifty-five minutes after the incision was made, some delay having been caused by the difficulty in extracting the fragments of calculus from the deep parts behind the prostate. He was moderately, but not dangerously, shocked, and in ten hours had a normal temperature and a pulse of 100.

For three days the outlook was most favorable.

There was not a single alarming symptom. The temperature reached 100° once on the second day, but fell again to normal, and subsequently was normal throughout with the exception of a few hours on the fourth day, when it again rose to 100° . Milk was taken freely, the patient was rational and comfortable. About the middle of the fourth day, however, he suddenly developed a maniacal delirium with excessive restlessness, wakefulness, jactitation, etc. He obstinately refused food, took off dressings when he had an opportunity, and had to be kept in bed by force. His tongue became dry and dark, and his pulse increased in frequency, but there was neither chill, sweating, nor rise of temperature. The urine continued to flow from the wound, which was irrigated daily with boric acid, with listerine, with phénol sodique. Various sedatives and hypnotics were used without effect, attempts at stimulation were equally useless, and the patient finally passed into a condition of stupor and died seven and a half days after the operation.

The following are the notes of the autopsy: Man, five feet seven; emaciated, pallid. Wound, two and one-half inches long in the linea alba, extending upward from symphysis pubis. Walls healthy, granulating. Genito-urinary organs and rectum removed together. Bladder shows granulating surfaces where portions of prostate were removed, but these are much smaller and much less noticeable than might have been expected. Lower portion of prostate and wall of bladder intact. No injury to rectovesical septum or to urethra. No other foci of suppuration or ulceration present. Bladder capacious and moderately hypertrophied. Ureters distended to nearly the size of the wrist. Kidneys almost completely disorganized, containing multiple purulent collections, showing scars of previous ab-

scesses, and rendered almost useless by chronic nephritis, scarcely any secreting structure remaining. Abdomen, organs healthy. Thorax, tubercular changes in both lungs. Cranium not opened.

REMARKS.—As I look back upon the case I may make the following criticisms of my own course:

I. It would have been wiser in the presence of scanty urine, tube-casts, and rapidly-increasing emaciation, and with a history of sixteen years of obstructive disease, to be content with supra-pubic lithotomy and permanent drainage. In only one of Mr. McGill's twenty-four cases had the symptoms extended over sixteen years or more. In that case only a portion of the prostate the size of a pea was removed, the patient was not much relieved at the end of six weeks, and his further history was not traced. The next case in order of duration of symptoms had extended over fourteen years. Three portions the size of a bean were removed. The patient died the following day. His kidneys were healthy. None of the other cases approached these in length of continuance of urinary symptoms. It may certainly be assumed that the possibility of the existence of serious disease of the urinary tract above the bladder increases in every case in a direct ratio with the duration of obstructive disease anterior to that organ. Indeed, we know that even frequency of micturition is of itself a competent cause of ureteral dilatation, hydro-nephrosis, etc., and when to these factors are added such grave vesical changes as occur in these cases, it becomes a matter of astonishment that healthy kidneys are ever found in these patients.

2. I should probably have used chloroform instead of ether in view of the renal disease which I knew to exist, and which might have been fairly supposed to be extensive. It will be noticed that death did not occur from any form of septicæmia or pyæmia. It was undoubtedly uræmic, and it may have been hastened or precipitated by the employment of $10\frac{1}{2}$ ounces of ether, many of the recorded ether-deaths having occurred in patients with chronic nephritis.

3. After the prostatectomy was decided upon and was begun, I might perhaps have been content with a much less thorough and extensive operation. Just here is emphasized the need of a large collection of similar cases reported in considerable detail, such as is now being made by Dr. Belfield.¹ I did not know then how much of the projecting prostate it was necessary to remove to insure subsequent spontaneous evacuation of the bladder. The risk of hæmorrhage, of shock from prolongation of the operation, of septic trouble from a larger absorbent surface, are all directly increased with the amount of the prostatic overgrowth which is removed, and it will be quite important in the future to know how little we may do with a reasonable prospect of resulting benefit.

In none of Mr. McGill's cases, where the weight of the portions removed is given, did it reach three ounces. In one both lateral lobes were removed in

¹ Since writing the above, Dr. Belfield's summary of cases has been published, and cannot fail to help us greatly in the attempt to arrive at definite conclusions as to the indications for and the value of the operation.

seven pieces, weighing two ounces and thirty grains. The patient died some months later. In another the piece removed weighed two ounces and forty grains. The patient died in thirty hours. We have not even now enough cases to generalize from, but it is significant that of the three deaths in Mr. McGill's table directly due to the operation, one was in a patient who had had symptoms for fourteen years; two underwent the removal of *large* portions of the prostate; and all three had bladders with thickened and hypertrophied walls. It is probable that we will find in these facts a valuable guide to our future work in this direction.

CASE II.—A year ago, discovering a small, hard stone in the bladder of a gentleman sent to me from a neighboring city, I advised median lithotomy. The patient was forty-three years old; had been a free liver; came from a gouty family; had had gonorrhœa twice in his youth, and with one case had an attack of acute prostatitis as a complication. He had a urethral stricture, calibre 23 French (normal calibre about 32), four and one-half inches from the meatus. His urinary symptoms had for years been referred to that, and he had never before been examined for stone. On introducing the vesical sound I had some difficulty in passing it through the prostatic urethra, but as he was hyperæsthetic and very nervous, I was not clear as to the cause. Examination *per rectum* disclosed a prostate which I noted at the time in my case-book as "very moderately enlarged, but distinctly indurated." His urine showed quantities of pus and phosphates and oxalates in great excess, but there were no tube-casts. I advised lithotomy on account of the existence of the stricture, the presence of the cystitis,

and the hardness and small size of the stone, which was presumably a mulberry calculus. Measurement by introduction of a very small lithotrite (child's size) showed that the stone was not more than a half to three-quarters of an inch in diameter, and confirmed the impression of its density given by the sound. The passage of the lithotrite was likewise difficult, gave rise to extreme pain, and was followed by profuse bleeding—facts which also influenced me in my selection of lithotomy, the small size of the stone leading me to choose the median variety of that operation.

A few days later, after the usual preparatory treatment, I cut him at his home. As the knife passed from the membranous to the prostatic urethra I remarked upon the almost cartilaginous density of the tissue through which I was cutting, and upon the great increase of the "perineal distance"—the distance from the junction of the membranous and prostatic urethras to the most distant point of the median enlargement within the bladder.¹ This distance, I should think, was not less than three and one-half inches, and it was only by having the hypogastrium strongly depressed that I could reach the bladder with the tip of my middle finger. A small pair of forceps was introduced, and after a little difficulty the stone was caught and extracted. Further digital exploration showed that the middle lobe of the prostate was enlarged, distinctly pedunculated, and projected directly upward. I seized this projecting portion, which was really intravesical, first on one side of my incision and then on the other, with strong forceps, and by dissection with my finger-nail, and by dragging and twisting strongly with the forceps I succeeded, with some trouble, in removing two small particles, each

¹ Watson: The Operative Treatment of the Hypertrophied Prostate.

the size of a hickory-nut, and looking to the naked eye, and on section with the knife, not unlike scirrhous carcinoma. As the patient bled freely, and the separation of the fragments required the use of so much force, and as I had not discussed with him or his family the propriety of any operation except that of lithotomy, I decided to refrain from further interference. I did so, however, without much hope of having given him permanent relief from his urinary symptoms.

The specimens were submitted to Dr. John Guitéras, Professor of Pathology in the University of Pennsylvania, who reported the growth as "a pure fibro-myoma with no admixture of suspicious elements of any sort." The patient convalesced without a bad symptom, and was out of bed with the wound healed in two weeks. He was in my office within a few days on account of a recent urethritis, and reports himself as free from all vesical symptoms.

REMARKS.—In this case, as I saw the patient but once before the operation, I neglected to inquire into the existence of residual urine. The absence of any lateral prostatic overgrowth, as revealed by rectal touch, prevented me from attaching much importance to the prostatic hardening which I did feel. The difficulty in the introduction of instruments seemed sufficiently explained by the great sensitiveness of the patient and by possible urethral and prostatic spasm dependent on the stricture and the calculus. If it had not been for these circumstances I would doubtless have discovered the prostatic growth earlier, as I was, of course, aware that intravesical growth sufficient to cause marked urinary symptoms frequently exists without any appreciable enlargement toward the rectum. I am not at all

sure, however, that such a discovery would have been to the advantage of my patient. If a prostatectomy in addition to a lithotomy had entered into my calculations I would probably have selected the suprapubic route for the performance of both operations. Indeed, after having made the median incision and discovered the depth of the perineum I would have been justified, according to excellent authority,¹ in employing hypogastric section and cystotomy then and there. I could by no possibility, however, have had a better result.

Perineal prostatectomy as an accidental or intercurrent complication of perineal lithotomy has been known since the days of Fergusson, and has never had a large mortality. Its usefulness, however, is confined to the class of cases like this one, in which the obstructive cause consists of an enlarged and pedunculated middle lobe. The other varieties described by McGill (and by Brodie, Cadge, Thompson, and others before him), viz, the collar enlargement, the hypertrophy of the lateral lobes, or of either of them alone, or the hypertrophy of all three lobes, are unquestionably to be dealt with most satisfactorily by suprapubic cystotomy; but it must be noted that the latter operation has a mortality of 16 per cent. as against 9 per cent. by the perineal method.² It seems to me that one explanation of this fact lies in the comparatively moderate interference with the prostate which this method permits of. I feel sure, at any rate, basing my opinion on general surgical principles, that some of the

¹ Watson: *loc. cit.* Belfield: *American Journal of the Medical Sciences*, November, 1890.

² Belfield, *loc. cit.*

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recent teaching on the subject touches too lightly on the increase of danger which must necessarily be associated with more extreme removals of portions of the prostate. Belfield, speaking of the possibility of return, says, for example:¹ "An important deduction from these considerations is the indication for thorough enucleation of all circumscribed masses within as well as above the general prostatic surface. Such tumors can be enucleated with surprising rapidity." "An important advance in the removal of prostatic obstructions is the enucleation of all accessible masses in the substance of the organ instead of a simple levelling off, etc." McGill² and Mayo Robson³ write in the same vein. I believe in the future of the operation, and think that in carefully-selected cases it is likely to have a progressively smaller mortality, but I do not think it one to be undertaken lightly, and I am quite sure that it is not proper to adopt it as a routine method of treatment in all prostatics.

A considerable proportion of patients with obstructive prostatic enlargement can be made perfectly comfortable by the use of a Nélaton or Mercier catheter, provided the instrument is scrupulously sterilized before and after each introduction. It should be employed by the patient himself from one to three times daily, according to the amount of residual urine. Such patients may go on for years in this manner with little or no difficulty, and do so with increasing frequency since the importance of urinary antisepsis has been realized and its

¹ Loc. cit.

² British Medical Journal, October 19, 1889.

³ Ibid., March 9, 1889.

details perfected. In spite of every precaution, however, a number of cases break down, the catheter cannot be passed without distress, or without causing troublesome bleeding, or occasionally cannot be passed at all. The urine becomes ammoniacal and stinking. Vesical tenesmus is constant and severe. These are the symptoms which, above all others, indicate the performance of prostatectomy, viz., difficult and painful catheterization and the occurrence of marked and persistent cystitis.

In the presence of those symptoms, in a person of average strength and vitality, the surgeon should, in my judgment, proceed in one of the two following ways:

First: Introduce Syme's staff into the bladder, and make a small incision through the perineum and the membranous and prostatic urethra. Introduce the finger into the bladder. If a pedunculated middle lobe is found, enucleate it with the finger, or twist it off with forceps, as in the above case. Put in a large drainage-tube, and allow it to remain for a week or two.

Or, second, make a suprapubic cystotomy, remove only such portions of the prostate as are manifestly obstructing the urethral orifice, and then if the urethra is not free complete the operation by doing an external perineal urethrotomy.

Statistics are not yet numerous enough to allow us to be dogmatic as to the relative merits of these plans, but I am inclined to think that in the majority of cases the second is the one to be preferred.

In cases markedly feeble, and especially in those with chronic nephritis, it is best to be content with establishing perineal drainage.

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